Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

NOTES.

PHILADELPHIA.—AMERICAN PHILOSOPHICAL SOCIETY, *December 15th.*—A sum of money was appropriated for the planting and preservation of a grove of oaks in Fairmount Park, to be called the Michaux Grove, in accordance with the will of the botanist Michaux.

Prof. E. D. Cope read a paper "On the *Pythonomorpha* of the cretaceous strata of Kansas." This embraced a synopsis of the species of the order known from all parts of the world, by which it appeared that America was its home, only four species having been described from Europe. He said that the *Danubiosaurus* of Bunzel had no relationship to the group. The American species were forty-two, distributed as follows: New Jersey green-sand, 15; rotten limestone of Alabama, 7; chalk of Kansas, 17; other localities, 3. The Kansas species were referred to *Clidastes* 3 sp., *Edestosaurus* 4 sp., *Holeodus* 4 sp., *Liodon* 6 sp. Of these *Edestosaurus tortor* and *E. stenops*, *Holeodus coryphaeus* and *H. tectulus;* and *Liodon curtirostris*, *L. latispines*, *L. glandiferus*, and *L. crassartus* were described as new.

January 5, 1872.—Hon. Eli K. Price read a paper "On some Phases of Modern Philosophy," in which he combatted the views of the Heterogenists and of the Evolutionists. In the latter part of the subject he opposed the views of Darwin, asserting that the variations seen among domesticated animals had no parallel among those in a state of nature, and the fact of their ready hybridization is indication of their specific unity. He quoted Professor Wyville Thompson, to the effect that no transition from species to species had ever been observed in palæontological history; and asserted that the variations observed among animals on which the developmentalists relied in evidence of their theory, were few and abnormal, and entirely insufficient for the use made of them. That the origin of man from apes was not supported by evidence. Lastly, that the theories of evolution are highly injurious to faith and morals, and thus to Christian civilization.

January 19*th.*—Benj. Smith Lyman read a paper "On the Oil Bearing Region of the Punjaub," accompanied by a topographical map. He pointed out the Tertiary age of the oil-bearing beds.

Professor Cope read a paper "On a new fossil reptile from the cretaceous strata of Kansas," which was named *Cynocercus incisus.* The vertebral articular faces were deeply excavated above and below, so as to give them a transverse character. A new Crocodilian from the same region was named *Hyposaurus Vebbii.*

Professor H. Hartshorne read a paper on "Organic Physics," of which the following is an abstract:

1. The expression "organic physics" is as well justified as "organic chemistry" and "animal mechanics." For,
2. Vital force is clearly *correlated with other physical forces*, as heat, light, etc.
3. But the correlation is *not identity.*
4. Advocates of the "continuity" theory have endeavored to make it *appear* to be identity; but they will not succeed; because,
5. The effects of heat, light, electricity, magnetism and gravitation are known, and they always tend (in the absence of life) to an opposite kind of change to that which occurs under life-force; namely,
6. They form of C., H., N., S., P., and C., compounds of few equivalents and stable equilibrium; while, under life-force, the same elements are made to produce compounds of many atoms or equivalents and of unstable equilibrium; the first are mainly crystalloids, the second always colloids.
7. The directness of this opposition is especially demonstrated by the result of death (arrest of life-force), which is attended by the resolution of the *complex*, *unstable*, *colloidal* organic substances into more simple, stable crystalloids and gases.
8. Eliminating all the functions of living beings otherwise explicable, we must restrict the term "vital action," or "action of life-force," to the *conversion of inorganic into organic material*, with type-formation or organic construction as its result. It is *supposable*, at least, though not proven, that the assumption of particular forms, under given circumstances, is (analogous to crystallization) the *property* of the *bioplasm; i.e.*, given the matter, the form results as its property or attribute.
9. But chemists have *never succeeded in making organizable matter by synthesis.* Nor is it *likely* that they ever will. All complex organic substances made in the laboratory (as *urea* by Wöhler, fatty acids, etc., by Berthelot, and even, if made, crystallizable neurin) are *post-organic* (a term first used by the author); *i.e.*, results of the downward or retrograde metamorphosis; produced not by life-force as such, but by the composition or balance between life-force and the other forces; they are not germinal or formative, but *formed* and *effete* materials (Beab's terms).
10. The question of the possibility of *abiagenesis* is not yet *finally* decided. Crosse gave it momentum with his galvanized

œarus; Pouchet and Pasteur have long debated it; Owen, Bennett, Clark, and a few others have of late years reasserted it; Bastian (Nature, 1870) makes an elaborate experimental defense of it. We note concerning it as follows: (*a*) The manipulation (to avoid *introducing* minute viable forms) requires an almost or quite *impracticable* delicacy throughout. (*b*) When heat is used we have always the alternative of concluding that certain minute organisms, *germs or spores*, can resist a higher temperature than was supposed, *or* that, taking for granted that the heat employed must have killed all germs, new life afterwards sprang up without parentage. All experience makes the former much more probable. George Pouchet's experiments with rotifers tend this way. Jeffries Wyman found that, although four hours boiling would not, five hours would put an end to all manifestations of life. Frankland's experiments (and Calvert's) gave similar results against abiagenesis. (*c*) Supposing (although Huxley does not) that Bastian could not have mistaken "Brownian" molecular movements for evidence of life, we yet observe that, *if* life sprang up in Bastian's apparatus, it was *such life as can exist without air or oxygen;* altogether unlike, therefore, ordinary world-life. (*d*) The assertion of Pasteur is justified, that the *onus probandi* lies with abiagenesists, since there is *no experience* of any living form *more* than $\frac{1}{1000}$ of an inch in diameter springing into life out of inorganic matter; it is, therefore, vastly *improbable* (needing most cogent evidence to prove) that any form *less* than $\frac{1}{1000}$ of an inch in size can be made to spring into life from inorganic matter.

11. While abiagenesis is *unproved*, we hold to the conclusion that vital force is *not* the mere outcome or resultant of any or all of the other cosmic forces.

12. How does it differ? Of the organic cell or "physiological unit," the most constant determinable acts or changes are *incretion and excretion;* atomic or molecular *motion*, definite in *results*, is an essential of life. Must *not the motion itself be peculiar?*

13. More definitely, we find,—that, while in the condensation of matter in the (nebular theoretical) formation of the Sun and planets, there was *integration of matter with dissipation of force as heat* (H. Spencer), life-action involves *integration of matter with accumulation of force* (*stored up* physical force in the plant of Barker; "bottled sunshine," of some one else). This is a striking contrast.

14. *Sexual* union is closely analogous to *chemical* union; instead of combustion, it makes construction by detaining products.

15. Again we notice the analogy between the spiral phyllotaxis of plants (opposite leaves a double spiral, whorls two or more, and bilateral symmetry of vertebrates and articulates and some mollusks, and radial symmetry of radiates and cœlenterates corresponding) and the spiral helix of the electro-magnet. As the

opposite chemical and polar elements of the battery are to the current of the helix, so (may be) are the polarities of the sperm-cell and germ-cell to the spiral phyllotaxis of plants and symmetrical (usually double) organo-taxis (a new term) of animals.

16. A *close* (but *reversed*) analogy exists between heat-force and vital force. A spark of fire may "light" and so burn successively an indefinite amount of *combustible* matter. A spark of life may *animate* an indefinite amount, successively of *organizable* matter. The former, combustion, *reduces* complex substances, which are unstable, to *more stable* compounds. The latter, life, *elevates* similar substances to more complex states; but with constant transmutation of their forms.

17. Such analogies are as yet crude, and do not solve the mystery of life.

18. But the facts on which they rest justify and encourage the *physical investigation* of *vital actions;* including their study *under physics; organic physics.*

19. Such a view of life is in no manner antagonistic of theism or of "teleology," any more than is the now familiar reduction of digestion, circulation, absorption, etc., to the category of chemical or physical phenomena. All such analytical inquiries are, moreover, *legitimate*, so long as they are accurate; *whether they point to biogenesis or abiogenesis; to the origin of types by interrupted appearances or by evolution.*

February 2d.—Prof. Geo. B. Wood communicated further results of his experiments with salts of potassa on vegetation, and especially on grain and fruits:

He stated that in a field of grain in which the soil had been previously exhausted by bad culture, one-half was enriched by barn manure, the other with the same with wood ashes added. The effects of the latter were especially marked, and much greater than with the former. The most striking results were obtained by the use of the ashes of the poke, *Phytolacca decandra.*

Prof. Cope read a paper on the "Families of Fossil Fishes of the Cretaceous strata of Kansas."—

The greater part of these were shown to be Physostomous Actinopteri of three families, viz.: the *Saurodontidæ*, the *Pachyrhizodontidæ*, and the *Stratodontidæ*. Of the first, four genera and ten species were described, some of them (*Portheus sp.*) among the most formidable of marine fishes. The peculiarities of the succession of teeth in *Portheus* and *Saurocephalus*, respectively, were pointed out. Of *Pachyrhizodontidæ* two genera (*Empo* and *Pachyrhizodus*) and five species were described, and of *Stratodontidæ*, three genera and seven species. *Stratodus* was a form provided with multitudes of minute shovel-headed teeth. As a general result the great resemblance of this fauna to that of the English Chalk, was pointed out, six of the nine genera of Kansas having been found in the latter.

March 1st.—Benjamin Smith Lyman read a paper "On the Topography of the Punjaub Oil Region."

It aimed at a somewhat detailed account of the topography of the oil region; its situation, general features, special features, etc. The different places were mentioned where each kind of topography is to be seen, and its causes and simple laws pointed out; chiefly in order to show the great usefulness of careful topographical studies to geology. A short sketch of the geology of the region, aside from structure, was also added.

The general section of the rocks of the region is as follows, below the new and old alluvians:

Miocene (Sivalik) perhaps	3,000 feet
Eocene (Nammulitic), with oil,	1,950 "
Carboniferous, without oil, about	1,800 "
Devonian, with Saltana plaster,	2,850 "
	9,600 feet

The oil or asphalt (dried oil) or rock tar (melted asphalt) is found at a dozen different places, and in very small traces at half a dozen more, all within a space of a hundred miles square. They are all in Nammulitic rocks, except one in carboniferous. The deposits all seem of very small horizontal extent, sometimes only a few feet, seldom a hundred yards, once only as much as half a mile. In this case, too, the oil-bearing bed is a hundred feet thick, in one other forty, in two others twenty, and in the rest much less. The oil comes in some places from lime rocks, in others from sand rock or shale. The yield of one well was at first fifty gallons a day, but grew quickly less, like the ordinate of a parabola, and seems likely to reach 3,000 gallons in all within a year and a half. At a rough guess a hundred such wells might be bored in the region, with a whole yield, then, of hardly 7,000 barrels. The natural springs (five) yield from a gill to three quarts a day. The oil is dark green and very heavy (25 B. or less). There is nothing whatever in the Punjaub oil deposits to bear out a belief in the distillation of oil from one bed to another, or in its emanation from below or in its gradual passage from the lower parts of a bed to higher parts of the same bed, or in its origin from any source but the decomposition of organic matter in the rock. Neither is there anything here (or anywhere else) to justify wild hopes of finding large quantities of oil by boring into cavities below the oil-bearing bed. The occurrence of salt, gypsum and alum shales in large quantities is noticed; as well as that of sulphur, saltpetre, brown coal in small quantities; and that of traces of copper, iron and lead.

Prof. E. D. Cope read a paper "On *Bathmodon*," a genus of extinct Ungulates. It was represented as perissodactyl in general characters, but with peculiarities of dentition of a combined ruminant and suilline character. There was on the outer side of the molars but one crescent, and before this a tubercle. The inner portion of the crown a tedge. Besides the species *Bathmodon radians*, a second form, *Loxolophodon semicinctus*, was referred to the group. The former animal was large as the rhinoceros, the second equal to the tapir.

Prof. Cope read a paper "On two new species of *Ornithosaurians* from the Kansas cretaceous." They were described as *Ornithochirus umbrosus* and *O. harpyia*. The former was regarded as one of the most gigantic of the Pterodactyles, extending probably 25 feet from tip to tip of the wings. The other was two-thirds the size.

Prof. Cope read a paper "On *Protostega*," a genus of extinct Testudinata. A detailed account of the osteology of *P. gigas* from the cretaceous was given, by which it appeared that the genus had separate ribs as in *Sphargis*, and that the carapace was formed by large radiating plates of bone in the skin. Two other species were described—*P. tuberosus* and *P. neptunus*. The latter, the largest known marine turtle, from New Jersey; the former, from the cretaceous of Mississippi, had been referred by Leidy to the Mosasauroids.

A discussion on Mr. Price's paper read at the last meeting took place, in which Prof. Hartshorne, Prof. Lesley, Mr. Price and Prof. Cope took part. Prof. Hartshorne supported the opposition to Abiogenesis expressed in the paper, on the ground of insufficiency of evidence in its favor, but believed in the evolution of species. Prof. Lesley objected to the insufficiency of Mr. Price's reasoning against the labors of experts in biological science, and stated that the more attention he paid to the subject, the better satisfied he became that man was descended from apes. Prof. Cope stated that Mr. Price's paper was in error as to the facts:

(1) That variability of specific type was even more common in nature than under domestication; examples from many so called "protean" genera being cited. (2) That some wild species did produce fertile hybrids. (3) That transitions between species both at the present time and in past geological periods, were common, but were concealed by a universal *petitio principii* involved in the practice of naturalists. This consisted in uniting distinct forms or species under the head of one species, as soon as the intervening connections were found. (4) That the known cases of

transition were numerous, not few; and that common induction required that we should believe of the unknown, that which we see in the known, when other circumstances were identical.

At the annual meeting of the London Geological Society, February 16, Mr. Joseph Prestwich, F.R.S., President, in the chair, the Wollaston Gold Medal was presented to the Secretary, Mr. David Forbes, for transmission to Professor Dana, of Yale College, Connecticut. The President said:

"I have the pleasure to announce that the Wollaston Medal has been conferred on Prof. Dana, of Yale College, New Haven, U. S.; and in handing it to you for transmission to our Foreign Member, I beg to express the great gratification it affords me that the award of the Council has fallen on so distinguished and veteran a geologist. Prof. Dana's works have a world-wide reputation. Few branches of geology but have received his attention. An able naturalist and a skilful mineralogist, he has studied our science with advantages of which few of us can boast. His contributions to our science embrace cosmical questions of primary importance—palæontological questions of special interest—recent phenomena in their bearings on geology, and mineralogical investigations, so essential to the right study of rocks, especially of volcanic phenomena. The wide range of knowledge he brought to bear in the production of his excellent treatise on Geology, one of the best of our class books, embracing the elements as well as the principles of geology. His treatise on Mineralogy exhibits a like skill in arrangement and knowledge in selection. In conveying to Prof. Dana this testimonial of the high estimation in which we hold his researches, may I beg also that it may be accompanied by an expression how strongly we feel that the bonds of friendship and brotherhood are connected amongst all civilised nations of the world by the one common, the one universal, and the one kindred pursuit of truth in the various branches of science."—Mr. David Forbes, in reply, said that "it was to him a great pleasure to have, in the name of Prof. Dana, to return thanks to the society for their highest honor, and for this mark of the appreciation in which his labors are held in England. It had rarely if ever occurred in the history of the society that the Wollaston medal had been awarded to any geologist who had made himself so well known in such widely different departments of the science, for not only was Prof. Dana preeminent as a mineralogist, but his numerous memoirs on the Crustaceans, Zoophytes, coral islands, volcanic formations, and other allied subjects, as well as his admirable treatise on general Geology, fully testify to the extensive range and great depth of his scientific researches."

The President then presented the balance of the proceeds of the Wollaston donation fund to Prof. Ramsey, for transmission to Mr. James Croll, and addressed him as follows:

"The Wollaston fund has been awarded to Mr. James Croll, of Edinburgh, for his many valuable researches on the Glacial phenomena of Scotland, and to aid in the prosecution of the same. Mr. Croll is also well known to all of us by his investigations of oceanic currents and their bearings on geological questions and of many questions of great theoretical interest connected with some of the great problems in Geology. Will you, Prof. Ramsey, in handing this token of the interest with which we follow his researches, inform Mr. Croll of the additional value his labors have in our estimation, from the difficulties under which they have been pursued, and the limited time and opportunities he has had at his command." — Prof. Ramsey thanked the president and council in the name of Mr. Croll for the honor bestowed on him. He remarked that "Mr. Croll's merits as an original thinker are of a very high kind, and that he is all the more deserving of this honor from the circumstance that he has risen to have a well recognised place among men of science without any of the advantages of early scientific training; and the position he now occupies has been won by his own unassisted exertions.—*Nature*.

CALIFORNIA ACADEMY OF SCIENCES. *March 4th.* A Communication was received from Prof. George Davidson, at present in the East, accepting the Presidency of the Academy.

A translation by Dr. A. B. Stout of an interesting paper by G. V. Frauenfeld, K. V. (of Vienna, 1870) on the "Extinct and Perishing Animals of the Earliest Epochs of the World" was read by the Secretary.

Dr. Ellinwood read a digest of a translation of the proceedings of the Society of Natural Sciences of Neuchatel, 1869–1870, giving a brief résumé of the principal discussions which occurred at the Archæological Congress at Copenhagen in 1869, being an interesting narration of the developments of antiquity, arising from an investigation of the shell mounds.

Mr. Stearns gave the result of his examination and researches in some of the numerous shell heaps and mounds at Point Penallis, Tampa Bay, Florida, near the supposed landing place of the Expedition of De Soto: —

The latter were composed of alternate thick strata of shells and thin strata of ashes; these alternations were owing to the infrequent visits of the Indians to the localities where these shell heaps are found, and during the interim between these visits a growth of grass and other vegetation had taken place, covering the heap, which was burnt over at a subsequent visit and a thin layer of ashes was thus made and covered with shells; and this process being repeated, in the course of years, the shell heap when cut through and examined presented the appearance of a regular stratification. The shells found in these heaps are the same as many now found living in the adjacent waters. In the shell heaps and near them, as well as in the burial or earth mounds, fragments of pottery, and arrowheads of chalcedony, and other implements of stone and shell may be found; and near the Point Pinallis mounds a remarkable vase of steatite, shaped somewhat like an ordinary soup tureen, had been discovered. The material of which this vase is made was probably obtained by the Indians at Apalachicola, near which place a deposit of soapstone existed, and the material for the arrowheads was without doubt obtained at the elevated and now fossilized coral reef in Hillsborough Bay, known as Ballast Point, not far from the town of Tampa. Mr. Stearns also briefly referred to the statements of the narrator of the De Soto Expedition relative to the abundance of pearls which were seen in possession of the Indians, and which were said to be obtained by some of the soldiers of De Soto. He was of the opinion that what De Soto's men thought were pearls, were the shells of *Marginella conoidalis.* A great number of this shell had been found in an ancient mound in the city of St. Louis.

Dr. Gibbons presented a copy of the "Oriental Medical Gazette" of Constantinople, which contained a paper by Dr. Abdullah Bey, descriptive of the contents of the mounds in Europe, Asia and Africa; the writer advancing the theory that the mound works being similar all over the world, they should be attributed in their origin to one race.

Mr. Wetmore referred to some interesting developments made in the shell mounds of South America.

Prof. H. G. Hanks presented remarkably fine specimens of jasper and tourmaline from Calaveras County.

"CENTRAL PARK MUSEUM.—*Destruction of Mr. Hawkins' Restorations.*— A TIMES reporter called yesterday on Mr. B. WATERHOUSE HAWKINS in order to ascertain the truth of the allegations made in a communication which appeared in yesterday's TIMES in reference to the destruction of his restorations in the Central Park Museum. Mr. HAWKINS stated that all he had done during twenty-one months to restore the skeletons of the extinct animals of America (of the Hadrosaurus, and the other gigantic animal, which was thirty-nine feet long), was destroyed by order of Mr. HENRY HILTON, on the 3d of May last, with sledge-hammer, and carted away to Mount St. Vincent where the remains were buried several feet below the surface. The preparatory sketches of other animals, including a mammoth and a mastodon and the moulds and sketch models were destroyed. Mr. HILTON did this, said Mr. HAWKINS, out of ignorance, just as he had a coat of white paint put on the skeleton of a whale which Mr. PETER COOPER had presented to the Museum, and just as he had a bronze statue painted white. Mr. HILTON told the celebrated naturalist who had come from England to undertake the work that he should not bother himself with "dead animals," that there was plenty to do among the living. This illustrates the policy of having such men as HILTON at the head of one of the most important Departments of the City Government. When the skeletons were dug up again, by order of Col. STEBBINS, they were found broken in thousands of pieces. Prof. Henry, of the Smithsonian Institution when he heard of this piece of barbarism, would not believe it. "Why," he exclaimed, "I would have paid them a good price for it." Mr. HILTON however, preferred to destroy the work of the naturalist which had cost the City at least twelve thousand dollars."

We copy the above from a slip cut by a friend from the "New York Times." What good will ever come to science from the million of dollars it is proposed to spend on the new building for a Museum of Natural History in the Central Park so long as the citizens of New York allow vandals and ignoramuses to hold the places that should be filled by men of culture and unquestionable scientific standing?

"WE alluded some time since to the threatened destruction of one of the most notable megalithic monuments in this country, the Great Circle at Avebury, in Wiltshire. All archæologists will be glad to hear that Sir John Lubbock has added one more to his eminent services to science by the purchase of the site on which the Circle stands. It is right also that the meed of praise should be awarded to those of the residents in the district whose zeal has been directed towards the attainment of this object, and who have thus shown their sense of the value of the monument which is one of the glories of their county. We refer especially to the Rev. Bryan King, the vicar of the parish, Mr. Kemm, Mr. George Brown, and the Rev. Alfred Charles Smith, Hon. Secretary of the Wiltshire Archæological and Natural History Society. It is to be hoped that their example will stimulate similar zeal for the preservation of monuments in other parts of the country." — *Nature.*

WHEN will Sir John Lubbock's example be followed here? Every year *our* monuments of a former race are being destroyed and no hand has yet been raised to save them.

PROF. Raphael Pumpelly *has* been appointed State Geologist of Missouri, as we are assured by a correspondent.

A French Association for the Advancement of Science, has been started. The annual meetings will be held in the various towns and cities. Over 100,000 francs, in shares of 200 francs each, have already been subscribed by the *founders* of the Association.

The Smithsonian Institution has recently succeeded in obtaining two complete skeletons of the remarkable tapir of the highlands of the United States of Colombia, known to naturalists as *Tapirus pinchaque* or *Roulini.* Previously only the skull had been obtained by Roulin, by whom it was first made known, and it was one of the rarities of the great anatomical collection at Paris. The Smithsonian Institution had before obtained a number of skulls and a skeleton of the still more remarkable tapir of Panama, which had remained undistinguished from the common species of Panama till within a few years, when first described, under the name of *Elasmognathus Bairdii*, by Prof. Gill, from two skulls in the Smithsonian collection. There are no external or dental differences between the tapirs corresponding with the marked differences in the skulls; the external differences being confined to the contour of the forehead, the color, and the character of the hair.

ANSWERS TO CORRESPONDENTS.

Sensitive Oat.—The sensitive or animated oat, as it is usually called, is the fruit of *Avena sterilis* L. It is a native of the Barbary States and the region of Gibraltar, but as it is not unfrequently cultivated as a curiosity it has become sparingly introduced in many places. Although not often found in gardens in this region, there will be no difficulty in getting seed from any of the larger dealers or florists.—W. G. F.

BOOKS RECEIVED.

Zoological Record for 1870; being vol. 7 of the Record of Zoological Literature. Edited by Alfred Newton. 8vo, pp. 523, cloth. London. Zoological Record Association. 1871.

Handbook of British Fungi, with full Descriptions of all the Species and Illustrations of the Genera. By M. C. Cooke. 2 vols., 8vo, pp. 981. 407 woodcuts and a colored plate, cloth. London and New York. Macmillan & Co. 1871.

The Metric System of Weights and Measures; an Address delivered before the Convocation of the University of the State of New York, at Albany, Aug. 1, 1871. By Frederick A. P. Barnard. Revised edition, printed by order of the Board of Trustees of Columbia College. 8vo, pp. 194. cloth. 1872.

Geological Survey of Ohio. Report of Progress in 1870. By J. S. Newberry, Chief Geologist. Including reports by E. B. Andrews, Edward Orton, J. H. Klippart, Assistant Geologists; T. G. Wormley, Chemist; G. K. Gilbert, M. C. Read, Henry Newton, W. B. Potter, Local Assistants. Columbus. State Document. 8vo, cloth, pp. 568, cuts with map packet. 1871.

Second Report of the Geological Survey of Indiana, made during the year 1870. By E. T. Cox, State Geologist, assisted by John Collett and G. M. Levette. 8vo, cloth, pp. 304, plates, cuts and maps. Also contains "Manual of the Botany of Jefferson Co.," by A. H. Young.

Sketch of the Botany of Pennsylvania. By Thomas C. Porter. (From Walling and Gray's New Topographical Atlas of Penn.) Folio. pp. 2, and map. 1872.

Notes on Podisoma. By M. C. Cooke. 8vo, pp. 14. 2 plates. London. 1871.

On Nucleated Sporidia. By M. C. Cooke. 8vo, pp. 4. London. 1871.